

8. An implantable cartilaginous tissue repair device according to claim **7** in which said integral attachment means comprises at least one mineralised surface layer, extension or flange.

9. An implantable cartilaginous tissue repair device according to claim **8** in which said at least one mineralised surface layer, extension or flange comprises hydroxyapatite.

10. An implantable cartilaginous tissue repair device according to claim **7** in which said integral attachment means further comprises:

one or more covalently bound growth factors selected from the list of growth factors consisting of: a bone morphogenetic protein or a TGF-beta or an epidermal growth factor or an insulin-like growth factor growth/differentiation factor-10 or Runx2 (Cbfa1/AML3) transcription factor

whereby, the recruitment, binding and/or differentiation of mesenchymal or stem cells is stimulated in order to secrete normal bone.

11. An implantable cartilaginous tissue repair device according to claim **7** in which said integral attachment means further comprises:

one or more covalently bound synthetic drugs with analogous functionality to any of the growth factors selected from a list of growth factors consisting of: a bone morphogenetic protein or a TGF-beta or an epidermal growth factor or an insulin-like growth factor or growth/differentiation factor-10 or Runx2 (Cbfa1/AML3) transcription factor

whereby, the recruitment, binding and/or differentiation of mesenchymal or stem stimulated in order to secrete normal bone.

12. An implantable cartilaginous tissue repair device according to claim **1** for total or partial replacement or augmentation of an intervertebral disc which device is substantially shaped like an anatomical intervertebral disc.

13. An implantable cartilaginous tissue repair device according to claim **12** which device comprises:

a substantially cylindrical nucleus pulposa analogue comprised of hydrogel and randomly oriented fibres;

successive layers of fibres laid down around said nucleus pulposa analogue whereby a trellis-like annulus fibrosa analogue is formed; and

substantially flat layers of fibres positioned at cephalad and caudad ends of the nucleus pulposa and annulus fibrosa analogues.

14. An implantable cartilaginous tissue repair according to claim **13** in which said annulus analogue comprises:

a plurality of substantially concentric, substantially cylindrical layers of fibres in each of which substantially cylindrical layers the fibres are substantially parallel to one another; and tilted at a substantially constant angle to the major axis of said concentric, cylindrical layers;

and in which said substantially flat layers at cephalad and caudad of the nucleus pulposa and annulus fibrosa analogues comprise:

a plurality radially to substantially of fibres laid substantially said substantially concentric, cylindrical layers; wherein the fibres of concentrically adjacent cylindrical layers of fibres are tilted at different substantially constant angles to the major axis of said concentric cylindrical layer, whereby successive layers of fibres provide a crossed, trellis-like structure.

15. An implantable cartilaginous tissue repair device according to claim **1** for total or partial replacement or aug-

mentation of a knee meniscus which device is substantially shaped like an anatomical knee meniscus.

16. An implantable cartilaginous tissue repair device according to claim **15** in which said three-dimensional fibre lay comprises a plurality of fibres arranged substantially circumferentially and a plurality of fibres arranged substantially radially.

17. An implantable cartilaginous tissue repair device according to claim **1** for total or partial replacement or augmentation of articular cartilage in which the orientation of the fibres in said three-dimensional fibre lay is substantially similar to the fibre orientation in the section of articular cartilage which is to be repaired.

18. An implantable cartilaginous tissue repair device according to claim **1** for total or partial replacement or augmentation of articular cartilage in which said three-dimensional fibre lay is formed as an arching arcade structure comprising:

at least one substantially flat base layer;

at least one substantially flat top articular surface layer which is substantially parallel to said base layer; and

a plurality of looped fibres which:

are stitched through said base layer;

run substantially perpendicular to said base layer and to said top articular surface layer; and

are held in place at the base layer and/or at the top articular surface layer by tying.

19. An implantable cartilaginous tissue repair device according to claim **1** for total or partial replacement or augmentation of a temporomandibular meniscus in which the orientation of the fibres in said three-dimensional fibre lay is substantially similar to the fibre orientation in an anatomical temporomandibular meniscus

20. A method for the manufacture of an implantable cartilaginous tissue repair device comprising the steps of:

forming a three-dimensional fibre lay from biocompatible and at least partially bioresorbable fibres by one or more of the methods of: winding or weaving or compressing felts or twisting or knitting or braiding or stitching or embroidery or combining layers of cloth;

preparing a biocompatible and at least partially bioresorbable, substantially porous hydrogel; and

either during or after production of said three-dimensional fibre lay, infiltrating said three-dimensional fibre lay with said biocompatible and at least partially bioresorbable, substantially porous hydrogel.

21. A method for the manufacture of cartilaginous tissue repair device claim **20** further comprising a step of:

cross-linking said three-dimensional fibre lay and/or cross-linking said substantially porous hydrogel.

22. A method for the manufacture of an implantable cartilaginous tissue repair device according to claim **20** further comprising a step of:

treating said three-dimensional fibre lay and/or said substantially porous hydrogel with a hydrophobic acylating agent.

23. A method for the manufacture of an implantable cartilaginous tissue repair device according to claim **20** in which said step of preparing a porous hydrogel comprises the sub-steps of:

preparing a solution of degummed silk;

gelling said solution of degummed silk

freezing the resulting gel of degummed silk.